

We Claim:

1 1. A method of making bags, comprising the steps of:

2 (a) providing along a transport path a welding station
3 having at least two spaced-apart elongated separation-welding
4 elements extending at a right angle to said path and adapted to
5 seam and to separate a bag from said web between said separation-
6 welding elements;

7 (b) advancing a double-layer synthetic resin film web
8 and bags separated therefrom stepwise forwardly through said
9 transport path on a first suction belt conveyor which is
10 continuous at least over a length of said first suction belt
11 conveyor encompassing all of said separation-welding elements at
12 a certain stepping frequency and synchronously actuating said
13 separation-welding elements in step with advance of said first
14 suction belt conveyor to seam and separate individual bags from
15 said web and advance said web and said bags on said first suction
16 belt conveyor;

17 (c) controlling a step length of each advance of said
18 suction belt conveyor so that said step length is equal to a
19 product ($n \times w$) of the number (n) of said separation-welding
20 elements and the width (w) of said bags;

21 (d) picking up said bags from said first suction belt
22 conveyor at a location downstream of said welding station with a

23 second suction belt conveyor disposed above said first suction
24 belt conveyor; and

25 (e) advancing said second suction belt conveyor
26 synchronously with stepping frequency of the first suction belt
27 conveyor.

1 2. The method defined in claim 1 wherein said second
2 suction belt conveyor is advanced with a stroke length per
3 advance which corresponds to that of said first suction belt
4 conveyor or is slightly greater than the stroke length of said
5 first suction belt conveyor.

1 3. The method defined in claim 1 wherein said bags are
2 collected from said second suction belt conveyor on a collecting
3 device having an endless belt extending partly beneath a region
4 of said second suction belt conveyor.

1 4. The method defined in claim 3 wherein said bags are
2 mounted on pins of said collecting device.

1 5. The method defined in claim 4 wherein said bags are
2 pressed onto said pins mechanically.

1 6. The method defined in claim 5, further comprising
2 the step of padding said bags in stacks on said pins to form
3 respective pads of said bags.

1 7. The method defined in claim 6, further comprising
2 the step of transferring said pads by a robot from said
3 collecting device to packing cartons.

1 8. The method defined in claim 1 wherein said bags are
2 seamed and separated in said welding station by two of said
3 separation-welding elements.

1 9. An apparatus for making bags from a synthetic resin
2 film in the form of a double layer web, said apparatus comprising
3 a first suction belt conveyor receiving said web and transporting
4 said web along a transport path;

5 a welding station along said path having at least two
6 spaced-apart elongated separation-welding elements extending at a
7 right angle to said path and adapted to seam and to separate the
8 bag from said web between said separation welding elements, said
9 separation welding elements extending at a right angle to said
10 path;

11 a second suction belt conveyor downstream of said
12 welding station and disposed above said first suction belt
13 conveyor for picking up said bags from said first suction belt
14 conveyor; and

15 drives for said first and second suction belt conveyors
16 for stepping said bags and said web along said first suction belt
17 conveyor and said bags with said second suction belt conveyor

18 synchronously with the stepping of said first suction belt
19 conveyor, said first suction belt conveyor extending without
20 interruption over an entire region encompassing the separation
21 welding element of said welding station.

1 10. The apparatus defined in claim 9 wherein said
2 welding station is provided with two of said separation welding
3 elements.

1 11. The apparatus defined in claim 10 wherein said
2 suction belt conveyor extends beneath said second suction belt
3 conveyor.

1 12. The apparatus defined in claim 11, further
2 comprising a pin-stacking device downstream of said welding
3 station and receiving said bags from said second suction belt
4 conveyor.

1 13. The apparatus defined in claim 12 wherein said
2 stacking device comprises a belt provided with pins for receiving
3 stacks of said bags and advancing said stacks of bags.

1 14. The apparatus defined in claim 13, further
2 comprising a knock-off device at an end of said second suction
3 belt conveyor for pressing said bags downwardly onto pins of said
4 pin-stacking device.

1 15. The apparatus defined in claim 14 wherein said
2 knock-off device comprises vertically movable pressing pads
3 disposed between parallel belts of said second suction belt
4 conveyor.

1 16. The apparatus defined in claim 15 wherein said
2 first suction belt conveyor is a single belt extending at least a
3 full width of said web.